CLAIMS

What is claimed is:

1. A method of automated sample processing comprising the steps of:
establishing a first stand alone automated sample processing system having an automated process operation capability that causes automated process operation events through first robotic sample process functions;
establishing at least a second stand alone automated sample processing system having an automated process operation capability that causes automated process operation events through second robotic sample process functions;
establishing an isolated electrical connection among said first stand alone automated sample processing system and said second stand alone automated sample processing system; and
automatically processing at least one sample through operation of said first robotic sample process functions; and
automatically processing at least one sample through operation of said second robotic sample process functions.

2. A method of automated sample processing as described in claim 2 wherein said step of establishing an isolated electrical connection among said first stand alone automated sample processing system and said second stand alone automated sample processing system comprises the step of utilizing an intermediate computer functionality.

3. A method of automated sample processing as described in claim 2 wherein said step of automatically processing at least one sample through operation of said first robotic sample process functions comprises the step of responding to said intermediate computer functionality, and wherein said step of automatically processing at least one sample through operation of said second robotic sample process functions comprises the step of responding to said intermediate computer functionality.

4. A method of automated sample processing as described in claim 3 wherein said step of automatically processing at least one sample through operation of said first

robotic sample process functions comprises the step of repetitively responding to said intermediate computer functionality, and wherein said step of automatically processing at least one sample through operation of said second robotic sample process functions comprises the step of repetitively responding to said intermediate computer functionality.

5. A method of automated sample processing as described in claim 2 wherein said step of utilizing an intermediate computer functionality comprises the step of utilizing a separate full function computer programmed for operation with an automated slide processing system.

6. A method of automated sample processing as described in claim 5 wherein said step of utilizing an intermediate computer functionality comprises the step of utilizing a server functionality.

7. A method of automated sample processing as described in claim 1 or 5 and further comprising the step of interacting between said first stand alone automated sample processing system and said second stand alone automated sample processing system.

8. A method of automated sample processing as described in claim 7 wherein said step of interacting between said first stand alone automated sample processing system and said second stand alone automated sample processing system comprises the step of communicating processing data between said first stand alone automated sample processing system and said second stand alone automated sample processing system.

9. A method of automated sample processing as described in claim 1 wherein said step of establishing a first stand alone automated sample processing system having an automated process operation capability that causes automated process operation events through first robotic sample process functions comprises the step of establishing a first automated slide processing system, and wherein said step of establishing at least a second stand alone automated sample processing system having an automated process operation capability that causes automated process

operation events through second robotic sample process functions comprises the step of establishing a second automated slide processing system.

10. A method of automated sample processing as described in claim 9 wherein said step of automatically processing at least one sample through operation of said first robotic sample process functions comprises the steps of:
arranging a plurality of slides on a carrier retainment assembly;
applying a reagent to said plurality of slides; and
automatically staining said plurality of slides,

and wherein said step of automatically processing at least one sample through operation of said second robotic sample process functions comprises the steps of:

arranging a plurality of slides on a carrier retainment assembly;
applying a reagent to said plurality of slides; and
automatically staining said plurality of slides.

11. A method of automated sample processing as described in claim 10 wherein said step of establishing an isolated electrical connection among said first stand alone automated sample processing system and said second stand alone automated sample processing system comprises the step of utilizing an intermediate computer functionality.

12. A method of automated sample processing as described in claim 11 wherein said step of utilizing an intermediate computer functionality comprises the step of utilizing a separate full function computer programmed for operation with an automated slide processing system.

13. A method of automated sample processing as described in claim 12 wherein said step of utilizing an intermediate computer functionality comprises the step of utilizing a server functionality.

14. A method of automated sample processing as described in claim 13 and further comprising the step of establishing a plurality of client functionalities connected to said isolated electrical connection.

15. A method of automated sample processing as described in claim 1, 5, or 10 wherein said step of establishing an isolated electrical connection among said first stand alone automated sample processing system and said second stand alone automated sample processing system comprises the step of establishing a scalable connection among said first stand alone automated sample processing system and said second stand alone automated sample processing system.

16. A method of automated sample processing as described in claim 15 wherein said step of establishing a scalable connection among said first stand alone automated sample processing system and said second stand alone automated sample processing system comprises the step of establishing an address-based connection among said first stand alone automated sample processing system and said second stand alone automated sample processing system.

17. A method of automated sample processing as described in claim 1, 5, or 10 wherein said step of establishing an isolated electrical connection among said first stand alone automated sample processing system and said second stand alone automated sample processing system comprises the steps of:

prompting address-based electronic communications programming on a separate full function computer electrically connected to said first stand alone automated sample processing system and said second stand alone automated sample processing system to request specific activity on said first stand alone automated sample processing system;

transferring said request for specific activity to said first stand alone automated sample processing system across said isolated electrical connection;

conducting activity on said first stand alone automated sample processing system as a result of said step of prompting electronic communications programming on a separate full function computer;

prompting address-based electronic communications programming on said first stand alone automated sample processing system to respond to said request for specific activity from said separate full function computer; and

transferring said response to said request for specific activity to said first stand alone automated sample processing system across said isolated electrical connection.

18. A method of automated sample processing as described in claim 17 wherein said step of establishing an isolated electrical connection among said first stand alone automated sample processing system and said second stand alone automated sample processing system further comprises the step of establishing a local area network.

19. A method of automated sample processing as described in claim 18 wherein said step of establishing a local area network electronically comprises the step of incorporating a system having a feature selected from a group consisting of:
an Ethernet element, a token ring element, an arcnet element, a fiber distributed data interface element, an industry specification protocol, a bluetooth-based element, a shared common link element, a transmission control protocol/internet protocol communication element, a packetized information protocol, a shared protocol, a proprietary protocol, and a layered protocol exchange system.

20. A method of automated sample processing as described in claim 1, 5, or 10 and further comprising the step of storing historical information.

21. A method of automated sample processing as described in claim 20 wherein said step of storing historical information comprises the steps of:
storing historical information relative to said first stand alone automated sample processing system on said first stand alone automated sample processing system; and
storing historical information relative to said second stand alone automated sample processing system on said second stand alone automated sample processing system.

22. A method of automated sample processing as described in claim 21 and further comprising the step of transferring at least part of said historical information to a separate electronic location.

23. A method of automated sample processing as described in claim 22 wherein said step of transferring at least part of said historical information to a separate electronic location comprises the step of automatically transferring at least part of

said historical information to a separate electronic location when said separate electronic location is available.

24. A method of automated sample processing as described in claim 1, 5, 10, or 20 wherein said step of establishing a first stand alone automated sample processing system having an automated process operation capability that causes automated process operation events through first robotic sample process functions comprises the step of establishing an array of multiple memory elements for said first stand alone automated sample processing system, and wherein said step of establishing at least a second stand alone automated sample processing system having an automated process operation capability that causes automated process operation events through second robotic sample process functions comprises the step of establishing an array of multiple memory elements for said second stand alone automated sample processing system.

25. A method of automated sample processing as described in claim 24 wherein said step of establishing an array of multiple memory elements for said first stand alone automated sample processing system comprises the step of establishing a mirrored array of multiple memory elements for said first stand alone automated sample processing system, and wherein said step of establishing an array of multiple memory elements for said second stand alone automated sample processing system comprises the step of establishing a mirrored array of multiple memory elements for said second stand alone automated sample processing system.

26. A method of automated sample processing as described in claim 1, 5, or 10 wherein said step of automatically processing at least one sample through operation of said first robotic sample process functions comprises the steps of:

interrupting processing through operation of said first robotic sample process functions; and

resuming processing through operation of said first robotic sample process functions,

and wherein said step of automatically processing at least one sample through operation of said second robotic sample process functions comprises the steps of:

interrupting processing through operation of said second robotic sample process functions; and

resuming processing through operation of said second robotic sample process functions.

27. A method of automated sample processing as described in claim 26 and further comprising the steps of:

changing at least one aspect of sample processing; and

rescheduling robotic sample process functions in response to said step of changing at least one aspect of sample processing.

28. A method of automated sample processing as described in claim 26 and further comprising the step of applying additional buffer to at least one sample in response to said step of changing at least one aspect of sample processing.

29. A method of automated sample processing as described in claim 1, 5, 10, 20, or 26 wherein said step of establishing an isolated electrical connection among said first stand alone automated sample processing system and said second stand alone automated sample processing system comprises the step of establishing a physically separate system connection.

30. A method of automated sample processing as described in claim 29 wherein said step of establishing an isolated electrical connection among said first stand alone automated sample processing system and said second stand alone automated sample processing system comprises the step of establishing an Internet connection.

31. A method of automated sample processing as described in claim 29 wherein said step of establishing an isolated electrical connection among said first stand alone automated sample processing system and said second stand alone automated sample processing system comprises the step of establishing an Ethernet connection.

32. A method of automated sample processing as described in claim 29 wherein said step of establishing an isolated electrical connection among said first stand alone

automated sample processing system and said second stand alone automated sample processing system comprises the step of establishing a telephone connection.

33. A method of automated sample processing as described in claim 29 wherein said step of establishing an isolated electrical connection among said first stand alone automated sample processing system and said second stand alone automated sample processing system comprises the step of establishing a connection to a separate room.

34. A method of automated sample processing as described in claim 29 wherein said step of establishing an isolated electrical connection among said first stand alone automated sample processing system and said second stand alone automated sample processing system comprises the step of establishing a wireless connection.

35. A method of automated sample processing as described in claim 29 wherein said step of establishing an isolated electrical connection among said first stand alone automated sample processing system and said second stand alone automated sample processing system comprises the step of establishing a bluetooth-based connection.

36. A method of automated sample processing as described in claim 29 wherein said step of establishing an isolated electrical connection among said first stand alone automated sample processing system and said second stand alone automated sample processing system comprises the step of establishing an e-mail based connection.

37. A method of automated sample processing as described in claim 29 wherein said step of establishing an isolated electrical connection among said first stand alone automated sample processing system and said second stand alone automated sample processing system comprises the step of establishing a hardwired connection.

38. A method of automated sample processing as described in claim 1, 5, or 10 and further comprising the step of connecting said isolated electrical connection to an external network.

39. A method of automated sample processing as described in claim 38 and further comprising the step of establishing an isolation functionality between said isolated electrical connection and said external network.

40. A method of automated sample processing as described in claim 38 wherein said step of connecting said isolated electrical connection to an external network comprises the step of connecting said isolated electrical connection to an office network.

41. A method of automated sample processing as described in claim 38 or 40 wherein said step of connecting said isolated electrical connection to an external network comprises the step of connecting said isolated electrical connection to a laboratory information system.

42. An automated sample processing system comprising:

a. a first sample;

b. a first stand alone automated slide processing system having a first robotic motion system to which said first sample is responsive;

c. a second sample;

d. a second stand alone automated slide processing system having a second robotic motion system to which said second sample is responsive;

e. an isolated electrical connection among said first stand alone automated sample processing system and said second stand alone automated sample processing system;

f. a first automated process functionality to which said first robotic motion system is responsive; and

g. a second automated process functionality to which said second robotic motion system is responsive.

43. A automated sample processing system as described in claim 42 wherein said isolated electrical connection comprises an intermediate computer functionality.

44. A automated sample processing system as described in claim 43 wherein said first automated process functionality comprises an intermediate computer response functionality, and wherein said second automated process functionality comprises an intermediate computer response functionality.

45. A automated sample processing system as described in claim 44 wherein said first automated process functionality comprises a repetitive intermediate computer response functionality, and wherein said second automated process functionality comprises a repetitive intermediate computer response functionality.

46. A automated sample processing system as described in claim 43 wherein said intermediate computer response functionality comprises a separate full function computer programmed for operation with an automated slide processing system.

47. A automated sample processing system as described in claim 46 wherein said intermediate computer response functionality comprises a server functionality.

48. A automated sample processing system as described in claim 42 or 46 and further comprising a processing system interaction functionality to which said first stand alone automated sample processing system and said second stand alone automated sample processing system are responsive.

49. A automated sample processing system as described in claim 48 wherein said processing system interaction functionality comprises a processing data communication functionality between said first stand alone automated sample processing system and said second stand alone automated sample processing system.

50. A automated sample processing system as described in claim 42 wherein said first stand alone automated sample processing system comprises a first automated

slide processing system, and wherein said second stand alone automated sample processing system comprises a second automated slide processing system.

51. A automated sample processing system as described in claim 50 wherein said first automated slide processing system comprises:
a plurality of slides on a carrier element retainment assembly;
at least one reagent container; and
a slide stain element configured to act upon said plurality of slides,
and wherein said second automated slide processing system comprises:
a plurality of slides on a carrier element retainment assembly;
at least one reagent container; and
a slide stain element configured to act upon said plurality of slides.

52. A automated sample processing system as described in claim 51 wherein said isolated electrical connection comprises an intermediate computer functionality.

53. A automated sample processing system as described in claim 52 wherein said intermediate computer response functionality comprises a separate full function computer programmed for operation with an automated slide processing system.

54. A automated sample processing system as described in claim 53 wherein said intermediate computer response functionality comprises a server functionality.

55. A automated sample processing system as described in claim 54 and further comprising a plurality of client functionalities connected to said isolated electrical connection.

56. A automated sample processing system as described in claim 42, 46, or 51 wherein said isolated electrical connection comprises a scalable connection.

57. A automated sample processing system as described in claim 56 wherein said scalable connection comprises an address-based connection.

58. A automated sample processing system as described in claim 42, 46, or 51 wherein said isolated electrical connection comprises:

an address-based electronic communications prompt functionality on a separate full function computer electrically connected to said first stand alone automated sample processing system and said second stand alone automated sample processing system;

a request transfer functionality to which said first stand alone automated sample processing system is responsive;

an address-based electronic communications prompt functionality on said first stand alone automated sample processing system; and

a response transfer functionality to which said separate full function computer is responsive.

59. A automated sample processing system as described in claim 58 wherein said isolated electrical connection comprises a local area network.

60. A automated sample processing system as described in claim 59 wherein said local area network electronically comprises a system having a feature selected from a group consisting of:

an Ethernet element, a token ring element, an arcnet element, a fiber distributed data interface element, an industry specification protocol, a bluetooth-based element, a shared common link element, a transmission control protocol/internet protocol communication element, a packetized information protocol, a shared protocol, a proprietary protocol, and a layered protocol exchange system.

61. A automated sample processing system as described in claim 42, 46, or 51 and further comprising an historical information generation element.

62. A automated sample processing system as described in claim 61 wherein said historical information generation element comprises:

a first historical information storage element on said first stand alone automated sample processing system; and

a second historical information storage element on said second stand alone automated sample processing system.

63. A automated sample processing system as described in claim 62 and further comprising a separate electronic location historical information transfer functionality.

64. A automated sample processing system as described in claim 63 wherein said separate electronic location historical information transfer functionality comprises an automatic separate location availability monitor.

65. A automated sample processing system as described in claim 42, 46, 51, or 61 wherein said first stand alone automated sample processing system comprises an array of multiple memory elements for said first stand alone automated sample processing system, and wherein said second stand alone automated sample processing system comprises the an array of multiple memory elements for said second stand alone automated sample processing system.

66. A automated sample processing system as described in claim 65 wherein said array of multiple memory elements for said first stand alone automated sample processing system comprises the a mirrored array of multiple memory elements, and wherein said establishing an array of multiple memory elements for said second stand alone automated sample processing system comprises a mirrored array of multiple memory elements.

67. A automated sample processing system as described in claim 42, 46, or 51 wherein said first automated process functionality comprises:

a process interrupt functionality to which said first robotic motion system is responsive; and

a process resume functionality to which said first robotic motion system is responsive,

and wherein said second automated process functionality comprises:

a process interrupt functionality to which said second robotic motion system is responsive; and

a process resume functionality to which said second robotic motion system is responsive.

68. A automated sample processing system as described in claim 67 and further comprising:
a sample process change functionality; and
a robotic sample process reschedule functionality responsive to said sample process change functionality.

69. A automated sample processing system as described in claim 67 and further comprising an additional buffer functionality responsive to said process interrupt functionality.

70. A automated sample processing system as described in claim 42, 46, 51, 61, or 67 wherein said isolated electrical connection comprises a physically separate system connection.

71. A automated sample processing system as described in claim 70 wherein said isolated electrical connection comprises an Internet connection.

72. A automated sample processing system as described in claim 70 wherein said isolated electrical connection comprises an Ethernet connection.

73. A automated sample processing system as described in claim 70 wherein said isolated electrical connection comprises a telephone connection.

74. A automated sample processing system as described in claim 70 wherein said isolated electrical connection comprises a connection to a separate room.

75. A automated sample processing system as described in claim 70 wherein said isolated electrical connection comprises a wireless connection.

76. A automated sample processing system as described in claim 70 wherein said isolated electrical connection comprises a bluetooth-based connection.

77. A automated sample processing system as described in claim 70 wherein said isolated electrical connection comprises an e-mail based connection.

78. A automated sample processing system as described in claim 70 wherein said isolated electrical connection comprises a hardwired connection.

79. A automated sample processing system as described in claim 42, 46, or 51 and further comprising an external network connection responsive to said isolated electrical connection.

80. A automated sample processing system as described in claim 79 and further comprising an isolation functionality between said isolated electrical connection and said external network.

81. A automated sample processing system as described in claim 79 wherein said external network connection comprises an office network connection.

81. A automated sample processing system as described in claim 79 or 81 wherein said external network connection comprises a laboratory information system connection.

83. A method of automated sample processing comprising the steps of:
establishing an automated sample processing system having an automated process operation capability that causes automated process operation events through robotic sample process functions;
transiently activating a remote information link with said automated sample processing system;
transferring sample process information through said remote information link; and
automatically processing at least one sample through operation of said robotic sample process functions.

84. A method of automated sample processing as described in claim 83 wherein said step of automatically processing at least one sample through operation of said robotic sample process functions comprises the step of responding to said remote information link.

85. A method of automated sample processing as described in claim 84 wherein said step of automatically processing at least one sample through operation of said

robotic sample process functions comprises the step of repetitively responding to said remote information link.

86. A method of automated sample processing as described in claim 83 or 84 wherein said step of establishing an automated sample processing system having an automated process operation capability that causes automated process operation events through robotic sample process functions comprises the step of establishing a stand alone automated sample processing system having an automated process operation capability that causes automated process operation events through robotic sample process functions.

87. A method of automated sample processing as described in claim 83 wherein said step of establishing an automated sample processing system having an automated process operation capability that causes automated process operation events through robotic sample process functions comprises the step of establishing an automated slide processing system.

88. A method of automated sample processing as described in claim 87 wherein said step of automatically processing at least one sample comprises the steps of:
arranging a plurality of slides on a carrier retainment assembly;
applying a reagent to said plurality of slides; and
automatically staining said plurality of slides.

89. A method of automated sample processing as described in claim 88 wherein said step of establishing an automated sample processing system having an automated process operation capability that causes automated process operation events through robotic sample process functions comprises the steps of:
establishing a plurality of automated slide stainers; and
electronically connecting said plurality of automated slide stainers.

90. A method of automated sample processing as described in claim 83, 86, or 88 wherein said step of automatically processing through operation of said robotic sample process functions comprises the steps of:
interrupting processing through operation of said first robotic sample process functions; and

resuming processing through operation of said first robotic sample process functions.

91. A method of automated sample processing as described in claim 90 and further comprising the steps of:
changing at least one aspect of sample processing; and
rescheduling robotic sample process functions in response to said step of changing at least one aspect of sample processing.

92. A method of automated sample processing as described in claim 90 and further comprising the step of applying additional buffer to at least one sample in response to said step of changing at least one aspect of sample processing.

93. A method of automated sample processing as described in claim 83 or 88 wherein said step of transferring sample process information through said remote information link comprises the step of automatically transferring sample process information from said automated sample processing system through said remote information link.

94. A method of automated sample processing as described in claim 93 wherein said step of automatically transferring sample process information from said automated sample processing system through said remote information link comprises the step of automatically transferring sample process system diagnostic information from said automated sample processing system through said remote information link.

95. A method of automated sample processing as described in claim 93 wherein said step of automatically transferring sample process information from said automated sample processing system through said remote information link comprises the step of automatically transferring sample process system refill information from said automated sample processing system through said remote information link.

96. A method of automated sample processing as described in claim 93 wherein said step of automatically transferring sample process information from said automated sample processing system through said remote information link comprises the step

of automatically transferring sample process system inventory information from said automated sample processing system through said remote information link.

97. A method of automated sample processing as described in claim 93 wherein said step of automatically transferring sample process information from said automated sample processing system through said remote information link comprises the step of automatically transferring sample process system status information from said automated sample processing system through said remote information link.

98. A method of automated sample processing as described in claim 93 wherein said step of automatically transferring sample process information from said automated sample processing system through said remote information link comprises the step of automatically transferring real time status information from said automated sample processing system through said remote information link.

99. A method of automated sample processing as described in claim 93 wherein said step of automatically transferring sample process information from said automated sample processing system through said remote information link comprises the step of automatically transferring sample process system backup information from said automated sample processing system through said remote information link.

100. A method of automated sample processing as described in claim 93 wherein said step of automatically transferring sample process information from said automated sample processing system through said remote information link comprises the step of automatically notifying a person selected from a group consisting of:
an instrument operator, an administrator, and a supplier,
through said remote information link.

101. A method of automated sample processing as described in claim 83, 88, or 93 wherein said step of automatically transferring sample process information from said automated sample processing system through said remote information link comprises the step of transferring sample process information to said automated sample processing system through said remote information link.

102. A method of automated sample processing as described in claim 101 wherein said step of transferring sample process information to said automated sample processing system through said remote information link comprises the step of transferring off-site support information to said automated sample processing system through said remote information link.

103. A method of automated sample processing as described in claim 101 wherein said step of transferring sample process information to said automated sample processing system through said remote information link comprises the step of transferring sample input information to said automated sample processing system through said remote information link.

104. A method of automated sample processing as described in claim 101 wherein said step of transferring sample process information to said automated sample processing system through said remote information link comprises the step of transferring schedule input information to said automated sample processing system through said remote information link.

105. A method of automated sample processing as described in claim 101 wherein said step of transferring sample process information to said automated sample processing system through said remote information link comprises the step of transferring status information to said automated sample processing system through said remote information link.

106. A method of automated sample processing as described in claim 101 wherein said step of transferring sample process information to said automated sample processing system through said remote information link comprises the step of automatically transferring system update information to said automated sample processing system through said remote information link.

107. A method of automated sample processing as described in claim 98 and further comprising the steps of:
transferring status information to said automated sample processing system through said remote information link; and

transferring sample input information to said automated sample processing system through said remote information link

108. A method of automated sample processing as described in claim 83, 88, or 101 wherein said step of transiently activating a remote information link with said automated sample processing system comprises the step of establishing a physically separate system connection.

109. A method of automated sample processing as described in claim 108 wherein said step of establishing a physically separate system connection comprises the step of establishing an Internet connection.

110. A method of automated sample processing as described in claim 108 wherein said step of establishing a physically separate system connection comprises the step of establishing a telephone connection.

111 A method of automated sample processing as described in claim 108 wherein said step of establishing a physically separate system connection comprises the step of establishing a connection to a separate room.

112. A method of automated sample processing as described in claim 108 wherein said step of establishing a physically separate system connection comprises the step of establishing a wireless connection.

113. A method of automated sample processing as described in claim 108 wherein said step of establishing a physically separate system connection comprises the step of establishing a bluetooth-based connection.

114. A method of automated sample processing as described in claim 108 wherein said step of establishing a physically separate system connection comprises the step of establishing an e-mail based connection.

115. A method of automated sample processing as described in claim 108 wherein said step of establishing a physically separate system connection comprises the steps of:

prompting address-based electronic communications programming on a separate full function computer electrically connected to said automated sample processing system;

transferring said request for specific activity to said automated sample processing system across said remote information link;

conducting activity on said automated sample processing system as a result of said step of prompting electronic communications programming on a separate full function computer;

prompting address-based electronic communications programming on said automated sample processing system to respond to said request for specific activity from said separate full function computer; and

transferring said response to said request for specific activity to said automated sample processing system across said remote information link.

116. A method of automated sample processing as described in claim 108 wherein said step of establishing an automated sample processing system having an automated process operation capability that causes automated process operation events through robotic sample process functions comprises the steps of:

establishing a plurality of automated slide stainers; and

electronically connecting said plurality of automated slide stainers.

117. A method of automated sample processing as described in claim 115 wherein said step of establishing a physically separate system connection further comprises the step of utilizing a separate full function computer programmed for operation with an automated slide processing system.

118. A method of automated sample processing as described in claim 115 wherein said step of establishing a physically separate system connection further comprises the step of establishing a local area network.

119. A method of automated sample processing as described in claim 118 wherein said step of establishing a local area network electronically comprises the step of incorporating a system having a feature selected from a group consisting of:

an Ethernet element, a token ring element, an arcnet element, a fiber distributed data interface element, an industry specification protocol, a bluetooth-based

element, a shared common link element, a transmission control protocol/internet protocol communication element, a packetized information protocol, a shared protocol, a proprietary protocol, and a layered protocol exchange system.

120. An automated sample processing system comprising:
at least one sample;
an automated slide processing system having a robotic motion system to which said first sample is responsive;
a transiently active remote information link with said automated sample processing system; and
an automated process functionality to which said robotic motion system is responsive.

121. A automated sample processing system as described in claim 120 wherein said automated process functionality comprises a transient remote response functionality.

122. A automated sample processing system as described in claim 121 wherein said transient remote response functionality comprises a repetitive transient remote response functionality.

123. A automated sample processing system as described in claim 120 or 121 wherein said automated sample processing system comprises a stand alone automated sample processing system.

124. A automated sample processing system as described in claim 120 wherein said automated sample processing system comprises an automated slide processing system.

125. A automated sample processing system as described in claim 124 wherein said automated slide processing system comprises:
a plurality of slides on a carrier element retainment assembly;
at least one reagent container; and
a slide stain element configured to act upon said plurality of slides.

126. A automated sample processing system as described in claim 125 wherein said automated sample processing system comprises:
a plurality of automated slide stainers; and
an electronic connection to said plurality of automated slide stainers.

127. A automated sample processing system as described in claim 120, 123 or 125 wherein said automated process functionality comprises:
a process interrupt functionality to which said robotic motion system is responsive; and
a process resume functionality to which said robotic motion system is responsive.

128. A automated sample processing system as described in claim 127 and further comprising:
a sample process change functionality; and
a robotic sample process reschedule functionality responsive to said sample process change functionality.

129. A automated sample processing system as described in claim 127 and further comprising an additional buffer functionality responsive to said process interrupt functionality.

130. A automated sample processing system as described in claim 120 or 125 and further comprising an automatic sample process information transfer functionality configured to transfer information from said automated sample processing system.

131. A automated sample processing system as described in claim 130 wherein said automatic sample process information transfer functionality comprises an automatic sample process system diagnostic information transfer functionality.

132. A automated sample processing system as described in claim 130 wherein said automatic sample process information transfer functionality comprises an automatic sample process system refill information transfer functionality.

133. A automated sample processing system as described in claim 130 wherein said automatic sample process information transfer functionality comprises an automatic sample process system inventory information transfer functionality.

134. A automated sample processing system as described in claim 130 wherein said automatic sample process information transfer functionality comprises an automatic sample process system status information transfer functionality.

135. A automated sample processing system as described in claim 130 wherein said automatic sample process information transfer functionality comprises an automatic sample process system real time status information transfer functionality.

136. A automated sample processing system as described in claim 130 wherein said automatic sample process information transfer functionality comprises an automatic sample process system backup information transfer functionality.

137. A automated sample processing system as described in claim 130 wherein said automatic sample process information transfer functionality comprises an automatic notification functionality selected from a group consisting of:
an instrument operator notification functionality, an administrator notification functionality, and a supplier notification functionality.

138. A automated sample processing system as described in claim 120, 125, or 130 and further comprising an automatic sample process information transfer functionality configured to transfer information to said automated sample processing system.

139. A automated sample processing system as described in claim 138 wherein said automatic sample process information transfer functionality comprises an off-site support information transfer functionality.

140. A automated sample processing system as described in claim 138 wherein said automatic sample process information transfer functionality comprises a sample input information transfer functionality.

141. A automated sample processing system as described in claim 138 wherein said automatic sample process information transfer functionality comprises a schedule input information transfer functionality.

142. A automated sample processing system as described in claim 138 wherein said automatic sample process information transfer functionality comprises a status information transfer functionality.

143. A automated sample processing system as described in claim 138 wherein said automatic sample process information transfer functionality comprises a system update information transfer functionality.

144. A automated sample processing system as described in claim 135 and further comprising:
a status information transfer functionality; and
a sample input information transfer functionality.

145. A automated sample processing system as described in claim 120, 125, or 138 wherein said transiently active remote information link comprises a physically separate system connection.

143. A automated sample processing system as described in claim 145 wherein said physically separate system connection comprises an Internet connection.

147. A automated sample processing system as described in claim 145 wherein said physically separate system connection comprises a telephone connection.

148. A automated sample processing system as described in claim 145 wherein said physically separate system connection comprises a connection to a separate room.

149. A automated sample processing system as described in claim 145 wherein said physically separate system connection comprises a wireless connection.

150. A automated sample processing system as described in claim 145 wherein said physically separate system connection comprises an e-mail based connection.

151. A automated sample processing system as described in claim 145 wherein said isolated electrical connection comprises:
an address-based electronic communications prompt functionality on a separate full function computer electrically connected to said first stand alone automated sample processing system and said second stand alone automated sample processing system;
a request transfer functionality to which said first stand alone automated sample processing system is responsive;
an address-based electronic communications prompt functionality on said first stand alone automated sample processing system; and
a response transfer functionality to which said separate full function computer is responsive.

152. A automated sample processing system as described in claim 145 wherein said automated sample processing system comprises:
a plurality of automated slide stainers; and
an electronic connection to said plurality of automated slide stainers.

153. A automated sample processing system as described in claim 151 wherein said transiently active remote information link comprises a separate full function computer programmed for operation with an automated slide processing system.

154. A automated sample processing system as described in claim 151 and further comprising a local area network to which said automated sample processing system is connected.

155. A automated sample processing system as described in claim 154 wherein said local area network electronically comprises a system having a feature selected from a group consisting of:
an Ethernet element, a token ring element, an arcnet element, a fiber distributed data interface element, an industry specification protocol, a bluetooth-based element, a shared common link element, a transmission control protocol/internet protocol communication element, a packetized information protocol, a shared protocol, a proprietary protocol, and a layered protocol exchange system.

156. A method of automated sample processing comprising the steps of:
establishing an automated sample processing system having an automated process operation capability that causes automated process operation events through robotic sample process functions;
activating a continuous physically remote information link with said automated sample processing system;
continuously transferring sample process information through said continuous physically remote information link; and
automatically processing at least one sample through operation of said robotic sample process functions in response to said continuously transfer of sample process information.

157. A method of automated sample processing as described in claim 156 wherein said step of automatically processing at least one sample through operation of said robotic sample process functions comprises the step of responding to said remote information link.

158. A method of automated sample processing as described in claim 157 wherein said step of automatically processing at least one sample through operation of said robotic sample process functions comprises the step of repetitively responding to said remote information link.

159. A method of automated sample processing as described in claim 156 or 157 wherein said step of activating a continuous physically remote information link with said automated sample processing system comprises the steps of:
prompting address-based electronic communications programming on a separate full function computer electrically connected to said automated sample processing system;
transferring said request for specific activity to said automated sample processing system across said remote information link;
conducting activity on said automated sample processing system as a result of said step of prompting electronic communications programming on a separate full function computer;

prompting address-based electronic communications programming on said automated sample processing system to respond to said request for specific activity from said separate full function computer; and

transferring said response to said request for specific activity to said automated sample processing system across said remote information link.

160. A method of automated sample processing as described in claim 156 wherein said step of activating a continuous physically remote information link with said automated sample processing system comprises the step of activating a constantly available physically remote information link with said automated sample processing system

161. A method of automated sample processing as described in claim 156 or 157 wherein said step of establishing an automated sample processing system having an automated process operation capability that causes automated process operation events through robotic sample process functions comprises the step of establishing a stand alone automated sample processing system having an automated process operation capability that causes automated process operation events through robotic sample process functions.

162. A method of automated sample processing as described in claim 156, 157, or 159 wherein said step of activating a continuous physically remote information link with said automated sample processing system comprises the step of utilizing a separate full function computer programmed for operation with an automated slide processing system.

163. A method of automated sample processing as described in claim 156, 157, or 159 wherein said step of activating a continuous physically remote information link with said automated sample processing system comprises the step of utilizing a server functionality.

164. A method of automated sample processing as described in claim 156 or 162 wherein said step of establishing an automated sample processing system having an automated process operation capability that causes automated process operation events through robotic sample process functions comprises the steps of:

establishing a plurality of automated slide stainers; and
electronically connecting said plurality of automated slide stainers.

165. A method of automated sample processing as described in claim 164 and further comprising the step of interacting between said plurality of automated sample processing systems.

166. A method of automated sample processing as described in claim 165 wherein said step of interacting between said plurality of automated sample processing systems comprises the step of communicating processing data between said plurality of automated sample processing systems.

167. A method of automated sample processing as described in claim 156, 162, or 164 wherein said step of establishing an automated sample processing system having an automated process operation capability that causes automated process operation events through robotic sample process functions comprises the step of establishing an automated slide processing system.

168. A method of automated sample processing as described in claim 167 wherein said step of automatically processing at least one sample comprises the steps of:
arranging a plurality of slides on a carrier retainment assembly;
applying a reagent to said plurality of slides; and
automatically staining said plurality of slides.

169. A method of automated sample processing as described in claim 168 wherein said step of establishing an automated sample processing system having an automated process operation capability that causes automated process operation events through robotic sample process functions comprises the steps of:
establishing a plurality of automated slide stainers; and
electronically connecting said plurality of automated slide stainers.

170. A method of automated sample processing as described in claim 168 wherein said step of establishing an automated sample processing system having an automated process operation capability that causes automated process operation events through robotic sample process functions comprises the step of establishing a

stand alone automated sample processing system having an automated process operation capability that causes automated process operation events through robotic sample process functions.

171. A method of automated sample processing as described in claim 168 wherein said step of activating a continuous physically remote information link with said automated sample processing system comprises the step of utilizing a separate full function computer programmed for operation with an automated slide processing system.

172. A method of automated sample processing as described in claim 171 wherein said step of activating a continuous physically remote information link with said automated sample processing system comprises the step of utilizing a server functionality.

173. A method of automated sample processing as described in claim 172 and further comprising the step of establishing a plurality of client functionalities connected to said isolated electrical connection.

174. A method of automated sample processing as described in claim 156, 162, or 168 wherein said step of activating a continuous physically remote information link with said automated sample processing system comprises the step of establishing a scalable connection with said automated sample processing system.

175. A method of automated sample processing as described in claim 174 wherein said step of establishing a scalable connection among with said automated sample processing system comprises the step of establishing an address-based connection with said automated sample processing system.

176. A method of automated sample processing as described in claim 168 or 169 wherein said step of activating a continuous physically remote information link with said automated sample processing system comprises the steps of:
prompting address-based electronic communications programming on a separate full function computer electrically connected to said automated sample processing system to request specific activity on said automated sample processing system;

transferring said request for specific activity to said automated sample processing system across said remote information link;

conducting activity on said automated sample processing system as a result of said step of prompting electronic communications programming on a separate full function computer;

prompting address-based electronic communications programming on said automated sample processing system to respond to said request for specific activity from said separate full function computer; and

transferring said response to said request for specific activity to said automated sample processing system across said remote information link.

177. A method of automated sample processing as described in claim 176 wherein said step of establishing a remote information link further comprises the step of establishing a local area network.

178. A method of automated sample processing as described in claim 176 wherein said step of establishing a local area network electronically comprises the step of incorporating a system having a feature selected from a group consisting of:

an Ethernet element, a token ring element, an arcnet element, a fiber distributed data interface element, an industry specification protocol, a bluetooth-based element, a shared common link element, a transmission control protocol/internet protocol communication element, a packetized information protocol, a shared protocol, a proprietary protocol, and a layered protocol exchange system.

179. A method of automated sample processing as described in claim 156, 161, or 168 wherein said step of automatically processing through operation of said robotic sample process functions comprises the steps of:

interrupting processing through operation of said robotic sample process functions; and

resuming processing through operation of said robotic sample process functions.

180. A method of automated sample processing as described in claim 179 and further comprising the steps of:

changing at least one aspect of sample processing; and

rescheduling robotic sample process functions in response to said step of changing at least one aspect of sample processing.

181. A method of automated sample processing as described in claim 179 and further comprising the step of applying additional buffer to at least one sample in response to said step of changing at least one aspect of sample processing.

182. A method of automated sample processing as described in claim 156, 162, or 168 wherein said step of activating a continuous physically remote information link with said automated sample processing system comprises the step of establishing an Internet connection.

183. A method of automated sample processing as described in claim 156, 162, or 168 wherein said step of activating a continuous physically remote information link with said automated sample processing system comprises the step of establishing an Ethernet connection.

184. A method of automated sample processing as described in claim 156, 162, or 168 wherein said step of activating a continuous physically remote information link with said automated sample processing system comprises the step of establishing a telephone connection.

185. A method of automated sample processing as described in claim 156, 162, or 168 wherein said step of activating a continuous physically remote information link with said automated sample processing system comprises the step of establishing a connection to a separate room.

186. A method of automated sample processing as described in claim 156, 162, or 168 wherein said step of activating a continuous physically remote information link with said automated sample processing system comprises the step of establishing a wireless connection.

187. A method of automated sample processing as described in claim 156, 162, or 168 wherein said step of activating a continuous physically remote information link

with said automated sample processing system comprises the step of establishing a bluetooth-based connection.

188. A method of automated sample processing as described in claim 156, 162, or 168 wherein said step of activating a continuous physically remote information link with said automated sample processing system comprises the step of establishing an e-mail based connection.

189. A method of automated sample processing as described in claim 156, 162, or 168 wherein said step of activating a continuous physically remote information link with said automated sample processing system comprises the step of establishing a hardwired connection.

190. An automated sample processing system comprising:
at least one sample;
an automated sample processing system having a robotic motion system to which said sample is responsive;
a continuous physically remote information link to which said automated sample processing system is responsive; and
an automated process functionality to which said robotic motion system is responsive.

191. A automated sample processing system as described in claim 190 wherein said automated process functionality comprises a physically remote information link response functionality.

192. A automated sample processing system as described in claim 191 wherein said remote information link comprises a repetitive physically remote information link response functionality.

193. A automated sample processing system as described in claim 191 wherein said remote information link comprises:
an address-based electronic communications prompt functionality on a separate full function computer electrically connected to said first stand alone automated

sample processing system and said second stand alone automated sample processing system;

a request transfer functionality to which said first stand alone automated sample processing system is responsive;

an address-based electronic communications prompt functionality on said first stand alone automated sample processing system; and

a response transfer functionality to which said separate full function computer is responsive.

194. A automated sample processing system as described in claim 190 wherein said remote information link comprises a constantly available physically remote information link.

195. A automated sample processing system as described in claim 190 or 191 wherein said automated sample processing system comprises a stand alone automated sample processing system.

195. A automated sample processing system as described in claim 190, 191, or 193 wherein said remote information link comprises a separate full function computer programmed for operation with an automated slide processing system.

197. A automated sample processing system as described in claim 190, 191, or 193 wherein said remote information link comprises a server functionality.

198. A automated sample processing system as described in claim 190 or 196 wherein said automated sample processing system comprises:

a plurality of automated slide stainers; and

an electronic connection to said plurality of automated slide stainers.

199. A automated sample processing system as described in claim 198 and further comprising a processing system interaction functionality to which said plurality of automated sample processing systems are responsive.

200. A automated sample processing system as described in claim 199 wherein said processing system interaction functionality comprises a processing data

communication functionality between said plurality of automated sample processing systems.

202. A automated sample processing system as described in claim 190, 196 or 198 wherein said automated sample processing system comprises an automated slide processing system.

203. A automated sample processing system as described in claim 201 wherein said automated slide processing system comprises:
a plurality of slides on a carrier element retainment assembly;
at least one reagent container; and
a slide stain element configured to act upon said plurality of slides.

203. A automated sample processing system as described in claim 202 wherein said automated sample processing system comprises:
a plurality of automated slide stainers; and
an electronic connection to said plurality of automated slide stainers.

204. A automated sample processing system as described in claim 202 wherein said automated sample processing system comprises a stand alone automated sample processing system.

205. A automated sample processing system as described in claim 202 wherein said remote information link comprises a separate full function computer programmed for operation with an automated slide processing system.

206. A automated sample processing system as described in claim 205 wherein said remote information link comprises a server functionality.

207. A automated sample processing system as described in claim 206 and further comprising a plurality of client functionalities connected to said isolated electrical connection.

208. A automated sample processing system as described in claim 190, 196, or 202 wherein said remote information link comprises a scalable connection.

209. A automated sample processing system as described in claim 208 wherein said scalable connection comprises an address-based connection.

210. A automated sample processing system as described in claim 202 or 203 wherein said remote information link comprises:
an address-based electronic communications prompt functionality on a separate full function computer electrically connected to said automated sample processing system;
a request transfer functionality to which said automated sample processing system is responsive;
an address-based electronic communications prompt functionality on said automated sample processing system; and
a response transfer functionality to which said separate full function computer is responsive.

211. A automated sample processing system as described in claim 210 wherein said remote information link comprises a local area network.

212. A automated sample processing system as described in claim 211 wherein said local area network electronically comprises a system having a feature selected from a group consisting of:
an Ethernet element, a token ring element, an arcnet element, a fiber distributed data interface element, an industry specification protocol, a bluetooth-based element, a shared common link element, a transmission control protocol/internet protocol communication element, a packetized information protocol, a shared protocol, a proprietary protocol, and a layered protocol exchange system.

213. A automated sample processing system as described in claim 190, 196, or 202 wherein said automated process functionality comprises:
a process interrupt functionality to which said robotic motion system is responsive; and
a process resume functionality to which said robotic motion system is responsive.

214. A automated sample processing system as described in claim 213 and further comprising:
a sample process change functionality; and
robotic sample process reschedule functionality responsive to said sample process change functionality.

215. A automated sample processing system as described in claim 213 and further comprising an additional buffer functionality responsive to said process interrupt functionality.

216. A automated sample processing system as described in claim 190, 196, 202, or 203 wherein said remote information link comprises an Internet connection.

217. A automated sample processing system as described in claim 190, 196, 202, or 203 wherein said remote information link comprises an Ethernet connection.

218. A automated sample processing system as described in claim 190, 196, 202, or 203 wherein said remote information link comprises a telephone connection.

219. A automated sample processing system as described in claim 190, 196, 202, or 203 wherein said remote information link comprises a connection to a separate room.

220. A automated sample processing system as described in claim 190, 196, 202, or 203 wherein said remote information link comprises a wireless connection.

221. A automated sample processing system as described in claim 190, 196, 202, or 203 wherein said remote information link comprises a bluetooth-based connection.

222. A automated sample processing system as described in claim 190, 196, 202, or 203 wherein said remote information link comprises an e-mail based connection.

223. A automated sample processing system as described in claim 190, 196, 202, or 203 wherein said remote information link comprises an hardwired connection.